CLAIMS

What is claimed is:

1. A method of managing power in a graphics controller, comprising:

Receiving a change indication related to a system power supply;

Adjusting a first clock; and

Adjusting a controller power supply voltage.

2. The method of claim 1 further comprising:

Signaling a BIOS with an indication of a change related to the system power supply.

3. The method of claim 2 further comprising:

Receiving a set of one or more available clock rates;

Checking a state of the graphics controller;

Choosing a desired clock rate from the set of available clock rates;

Adjusting a second clock to conform to the desired clock rate; and

wherein:

Adjusting the first clock comprises reducing a rate of the first clock; and

Adjusting the controller power supply voltage comprises reducing the controller power supply voltage.

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4. The method of claim 3 further comprising:

Disabling a CLUT.

5. The method of claim 4 wherein:

Disabling the CLUT responsive to checking the state of the graphics controller.

6. The method of claim 5 further comprising:

Notifying a system to reduce brightness of a display.

7. The method of claim 6 wherein:

Notifying the system comprises notifying a chipset directly.

8. The method of claim 1 wherein:

The controller power supply voltage is associated with a controller power supply internal to the graphics controller.

9. The method of claim 2 wherein:

The controller power supply voltage is associated with a controller power supply external to the graphics controller, and adjusting the controller power supply voltage includes programming the controller power supply with a signal.

10. The method of claim 1 wherein:

Adjusting the first clock comprises increasing a rate of the first clock; and

Adjusting the controller power supply voltage comprises increasing the controller power supply voltage.

11. The method of claim 10 further comprising:

Increasing a clock rate of a second clock.

12. The method of claim 11 further comprising:

Enabling a CLUT.

13. The method of claim 1 further comprising:

Detecting a change related to a system power supply.

14. The method of claim 13 further comprising:

Installing a software routine in a system containing the graphics controller, the software routine suitable for detecting the change related to the system power supply.

15. A method of effecting power management of a graphics controller in an operating system comprising:

Detecting a change in a system power supply;

Notifying the graphics controller of the change;

Receiving an indication of power reduction in the graphics controller; and

Providing a set of available clock frequencies to the graphics controller.

16. The method of claim 15 further comprising:

Receiving a signal from the graphics controller to reduce brightness of a display.

17. The method of claim 16 further comprising:

Reducing brightness of the display.

18. The method of claim 17 further comprising:

Receiving a software routine suitable for notifying the graphics controller; and wherein:

Notifying the graphics controller comprises executing the software routine.

19. The method of claim 18 further comprising:

Programming the set of available clock frequencies.

20. The method of claim 3 further comprising:

Disabling a first portion of circuitry of the graphics controller.

21. The method of claim 20 wherein

Disabling the first portion of circuitry responsive to checking the state of the graphics controller.

22. The method of claim 21 further comprising:

Enabling the first portion of circuitry of the graphics controller.

23. A graphics controller comprising:

A power supply input configured to receive power at a range of voltages;

A power supply control output;

A first clock;

And

A system power supply change input.

24. The graphics controller of claim 23 further comprising:

A first clock control output.

25. The graphics controller of claim 24 further comprising:

A memory coupled to the first clock.

26. The graphics controller of claim 24 further comprising:

A second clock; and

A second clock control output.

27. The graphics controller of claim 26 further comprising:

A memory coupled to the first clock.

28. The graphics controller of claim 27 wherein:

The memory is integrated with other portions of the graphics controller on a single substrate.

29. The graphics controller of claim 27 further comprising:

A voltage regulator coupled to the power supply input and the power supply control output.

30. The graphics controller of claim 29 wherein:

The voltage regulator is integrated with other portions of the graphics controller on a single substrate.

31. The graphics controller of claim 30 further comprising:

A VGA BIOS.

32. The graphics controller of claim 26 further comprising:

A brightness output configured to signal to a system that a reduction in brightness of a display is appropriate.

33. The graphics controller of claim 32 wherein:

The brightness output is suitable for coupling directly to a video control chipset.

34. The graphics controller of claim 32 further comprising:

A 2D engine;

A 3D engine;

A CLUT coupled to the 3D engine and coupled to the 2D engine;

A system interface including the system power supply input;

A video interface including the second clock and the second clock control output;

A power control interface including the power supply input and the power supply control output;

A memory control interface including the first clock; and

A control unit coupled to the system interface, the CLUT, the video interface, the power control interface, the memory control interface, the 2D engine and the 3D engine.

35. A graphics controller comprising:

A power supply input configured to receive power at a range of voltages;

A power supply control output;

A first clock;

A system power supply change input;

A first clock control output;

A second clock;

A second clock control output;

A brightness output configured to signal to a system that a reduction in brightness of a display is appropriate;

A 2D engine;

A 3D engine;

A CLUT coupled to the 3D engine and coupled to the 2D engine;

A system interface including the system power supply input;

A video interface including the second clock and the second clock control output;

A power control interface including the power supply input and the power supply control output;

A memory control interface including the first clock; and

A control unit coupled to the system interface, the CLUT, the video interface, the power control interface, the memory control interface, the 2D engine and the 3D engine.

36. A method of managing power in a graphics controller, comprising:

Receiving a change indication related to a system power supply;

reducing a rate of a first clock;

reducing a controller power supply voltage;

Signaling a BIOS with an indication of a change related to the system power supply;

Receiving a set of one or more available clock rates;

Checking a state of the graphics controller;

Choosing a desired clock rate from the set of available clock rates;

Adjusting a second clock to conform to the desired clock rate;

Disabling a first portion of circuitry responsive to checking the state of the graphics controller.